

A SURVEY OF WINTERING PALAEARCTIC WADERS IN THE SOUTHERN
PART OF THE KENYAN RIFT VALLEY

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The rift valley constitutes the main wintering area for Palaeartic waders in inland Kenya, and one of the most important in East Africa. Lake Turkana in the north, with approximately 500 km of shoreline, and the various small lakes from Baringo south to Magadi with a total of about another 150 km of shoreline, support many thousands of migrant waders each year from August to May, the principal species being the Little Stint *Calidris minuta*, the Ruff *Philomachus pugnax* and the Marsh Sandpiper *Tringa stagnatilis*. However, apart from local counts, quantitative data on waders are lacking for the rift valley lakes, as indeed for other wetland areas of East Africa. No attempts appear to have been made to survey wintering numbers over any area of substantial size.

With water levels usually highest during August - September and April - May, and falling progressively during October - March, rift valley wetland habitats tend to undergo considerable seasonal change, and much local winter movement of waders occurs. It is not easy therefore to establish seasonal patterns of wader abundance from observations at individual sites. Year to year differences may also be considerable as the result of longer term changes in water levels. We decided, however, that a mid-winter count, extending over a substantial section of the rift valley would be of value in providing a reference for future census work, and hopefully in stimulating interest in surveys in other major areas. During January 1980 therefore, we jointly carried out such a survey, and the results are reported here.

METHODS AND LOCALITIES

Wader numbers were assessed at most of the major sites of which we were aware in the southern part of the Kenyan rift valley, from Baringo south to Shombole. In addition to Lakes Baringo, Bogoria, Nakuru, Elmenteita, Naivasha and Magadi (east and south shores), we visited the southern Ewaso Nyiro swamp near Shombole, and a sometimes flooded swamp northeast of Mogotio. We were unable to visit Solai, which was flooded at the time; nor did we cover the western and northern sides of Lake Magadi, where extra birds would have been located. We believe that very few waders occur in the southern Kenyan rift away from the above mentioned sites.

Having flooded much vegetation during the wet years 1977-78, the rift lakes were receding quite quickly during late 1979-early 1980, leaving muddy edges attractive to many wader species, and relatively accessible for counting. At each site, as much as possible of the shoreline and other wetland habitat was counted in the time available. However, where long stretches or large areas of rather uniform habitat were involved, or where swamp made access particularly difficult, representative sections were often counted, and numbers multiplied up appropriately to obtain the best total estimates. A complete survey of the shores of Lake Baringo was made possible by use of a small boat, and the whole shore of Lake Bogoria was counted, much of it from a vehicle. The lakeshores further south were worked mainly on foot. Approximate percentages of shoreline actually counted were: at Nakuru 70 per cent, at Elmenteita 40 per cent, and at Naivasha 30 per cent. The wader areas east and south of Lake Magadi were completely surveyed, but estimates at Ewaso Nyiro were inevitably based on numbers recorded along about 3 km of the margin of the swamp area. The potential swamp site near Mogotio, which had contained several hundred waders early in 1979, was completely dry early in 1980.

At the time of the count, the main features of the seven productive sites

were as follows:

Lake Baringo: productive areas at this freshwater lake were confined to the western and southern shores, where flat areas of open mud had been exposed by a rapid fall in water level. Although much of this was already very hard in January 1980, a narrow lake edge fringe was suitable for most wader species. The rocky northern and eastern shores accomodated very few birds.

Lake Bogoria: a drop in the level of this soda lake had exposed a shoreline largely of gravel and stones. An area of mud at the north-east corner, and several shallow muddy pools parallel to the western shore were particularly rich in wading species. Numbers were lowest along the steeper, rockier eastern shore.

Lake Nakuru: the soda lake had receded from flooded grassland on its western and southeastern shores, leaving muddy edges up to over 100 m wide in places, which accounted for most of the waders. Birds also abounded along the northern shore, where flooded bushes and woodland undergrowth were still wet and swampy. A wide belt of wet sedge *Cyperus laevigatus* along the eastern border of the lake contained a few shallow pools, and more waders, but the more steeply shelving southwest corner was unproductive.

Lake Elmenteita: although of similar alkalinity to Nakuru, this small lake with its more rocky, steeply shelving shores accounted for fewer waders. Mud flats and flooded sedge with a few shallow pools and creeks were confined to the western side and the northeast corner.

Lake Magadi: most of the lake consisted, as usual in mid-winter, of dry soda-encrusted mud, lacking in birds. The soda springs at the southwest edge of the lake (the Bird Rock area) and at the southern extremity provide an environment which varies little, and where hard wet mud, clay and gravel-bottomed streams and adjacent shallow muddy lake borders are highly attractive to waders. The soda pans near the township, which at times provide extensive additional areas of muddy edge, were flooded and accomodated few birds at the time of the survey.

Lake Naivasha: the gently shelving northern and eastern shores of this freshwater lake had receded from the bordering grassland and patches of reed, to expose a narrow edge, with emerging spits and mudbanks, small creeks and pools and patches of bush killed by the flood. These areas accounted for the majority of the waders. Oloiden Bay was also bordered by mud, but the lake edge here was covered by floating *Salvinia*. Few waders were found on the western and northwestern shores, where extensive papyrus bordered deeper water, or on rocky parts of the southern shore.

The Ewaso Nyiro swamps: the extensive area of reeds and the bordering grasslands are at times inundated with fresh water, but at others practically dry. Early in 1980 water was confined to swampy pools in and along the margins of the reedbeds. Wader numbers were relatively low, and far less than at the same time in 1979.

RESULTS

Numbers estimated at the seven productive sites are given in Table 1. Over 15 000 waders were located in all, including approximately 6000 Ruffs and 6000 Little Stints. Some of the differences in relative species abundance from site to site confirmed impressions already gained by the authors and others in earlier years. Thus, low numbers of Ruffs and Marsh Sandpipers, and relatively high numbers of Greenshanks *Tringa nebularia* are typical of the open, very alkaline spring areas of Magadi, whilst Curlew Sandpipers *Calidris ferru-*

ginea and Ringed Plovers *Charadrius hiaticula* are generally noted as being well represented on muddy, freshwater margins at Naivasha. Early in 1980, Ruffs and Marsh Sandpipers were particularly numerous at Naivasha, Nakuru and Bogoria, where they favoured muddy shores and pools. Wood Sandpipers *Tringa glareola*, on the other hand, preferred swamp and sedge, and were common only at Lake Baringo, on the northern and eastern shores of Lake Nakuru, around Lake Naivasha and at Ewaso Nyiro. Experience in previous years has shown that surprisingly few Common Sandpipers *Actitis hypoleucos* winter in the rift valley. The survey showed small numbers at the two freshwater lakes, Naivasha and Baringo, but very few indeed elsewhere. Common Snipe *Gallinago gallinago* were present in flooded grassland at Naivasha (where numbers may have been considerably underestimated), in wet grassland and sedge on the east and north sides of Lake Nakuru, and at Ewaso Nyiro. They were accompanied by about equal numbers of African Snipe *G. nigripennis* at Naivasha, but not at Nakuru or Ewaso Nyiro.

TABLE 1

Estimates of Palaeartic wader numbers at seven major sites in the southern Kenyan rift valley, January 1980

	Bar	Bog	Nak	Elm	Mag	Nai	Ewa	Total
Ruff	30	850	2600	150	150	2000	200	5980
Little Stint	100	1000	2000	400	1400	1000	100	6000
Curlew Sandpiper	40	200	150	80	120	500	20	660
Marsh Sandpiper	35	50	190	30	15	550	70	940
Wood Sandpiper	20	3	210	4	-	350	150	740
Greenshank	12	7	13	6	30	25	5	100
Ringed Plover	30	20	45	20	1	200	-	320
Common Snipe	1-3	-	65	-	-	150	20	240
Common Sandpiper	20	2	5	4	-	30	-	60
Spotted Redshank	4-7	0-11	4	-	-	15 (6)	-	40
Little Ringed Plover	0-3	-	7	-	-	-	10 (7)	20
Black-tailed Godwit	3-7	-	3	-	-	70	-	80
Temminck's Stint	1	1	2	-	-	20 (13)	1	25
Grey Plover	0-1	-	2	-	-	-	-	3
Green Sandpiper	-	-	5	-	-	-	-	5
Terek Sandpiper	-	-	1	-	-	-	-	1
Great Snipe	-	-	-	-	-	1	-	1
Total	310	2140	5300	690	1720	4910	580	15 665

Notes: limits (e.g. 3-7) are given when different numbers were recorded on different January dates
 for some scarcer species, the actual numbers counted are given in brackets
 individual lake totals are rounded to the nearest 10
 individual species totals are rounded to the nearest 10, except in the case of the five scarcest species

Some of the minor species recorded during the survey have been generally regarded as scarce in East Africa, and therefore deserve comment. Thus, the totals of about 20 Little Ringed Plovers *Charadrius dubius* located, and about 40 Spotted Redshank *Tringa erythropus*, are of interest. The latter species has been increasingly recorded in recent years as a regular winter visitor to inland Kenya. The 70 Black-tailed Godwits *Limosa limosa* counted on the north shore of Lake Naivasha on 6 January (slightly smaller numbers were subsequently seen there to the end of March) appears to constitute the largest count of

this species in East Africa south of Lake Turkana. Comparable numbers of godwits (maximum 56 Black-tailed and one Bar-tailed *Limosa lapponica*) were seen at the same site early in 1977 (Meadows 1977). Temminck's Stints *Calidris temminckii* were found at most sites, and the number counted at Naivasha, again nearly all on the north shore, exceeded most recent East African figures for the species. A Great Snipe *Gallinago media* on the north shore of Naivasha on 6 January was interesting since the few recent Kenyan records of this species have mostly referred to passage birds. Finally, the two coastal species, Terek Sandpiper *Xenus cinereus* and Grey Plover *Pluvialis squatarola*, deserve mention, for such birds are rarely encountered inland during mid-winter except at Lake Turkana. The Green Sandpiper *Tringa ochropus*, of which only five were counted (at Lake Nakuru) during the survey, is a widespread and not uncommon bird in East Africa but it favours small muddy areas as distinct from the open shore or large areas of swamp.

DISCUSSION

With changing water levels, the distribution of wintering waders between the smaller rift valley lakes and swamps can certainly change markedly from year to year, and there is probably considerable annual variation in the total numbers of some species. The drying conditions produced particularly large numbers of birds during 1979/80 at Nakuru and Naivasha, and overall rift valley totals of, for example, Marsh Sandpipers and Curlew Sandpipers were probably high. On the other hand, the loss of potential swamp areas, and the limited availability of wet sedge and flooded grassland habitat certainly resulted in lower overall numbers of Wood Sandpipers and Common Snipe than during 1978/79. In order to establish average population figures, and to examine further the effects of changing rainfall and habitat on numbers of individual species, it would be desirable to repeat this rift valley survey in future winters.

Because of the paucity of quantitative data on waders from other wetland areas, it is not easy to assess the importance of the southern part of the Kenyan rift valley within the context of East Africa. It is, however, possible to make speculative comparisons with the four other areas in inland Kenya where waders winter in substantial numbers, namely the shores of Lake Turkana, the swamps and shores of the Lake Victoria basin, the lakes and dams of the highlands on either side of the rift, and man-made sites in the Nairobi/Thika/Athi River area.

Lake Turkana almost certainly supports the largest numbers of waders in inland Kenya. In late December 1976, one of us (DJP) counted no fewer than 10 500 Palaeartic waders (including 8000 Little Stints and 1000 Marsh Sandpipers) along just 5 km of the shore of Ferguson's Gulf, and at the time of the survey of January 1980 B.S. Meadows (pers. comm.) counted over 3000 waders along about 2 km of the same shore together with the opposite spit. Although this is a particularly rich area, and long rocky stretches of the lake shoreline can only support a low density of birds, total wintering numbers at Turkana probably exceed 50 000, and may exceed 100 000 (see also Fry, Britton & Horne 1974, Hopson & Hopson 1975). In Nyanza, swamps and lakeshore support a variety of waders, but the principal Palaeartic species (Wood Sandpipers, Common Sandpipers and Little Stints) are thinly distributed (see, for example, Britton & Britton 1976); it is doubtful whether a total of more than a few thousand birds is involved at most. The highland lakes and dams are utilized mainly by Ruffs, Wood Sandpipers and Little Stints. Ruffs at least, winter in substantial numbers, and DJP counted over 2000 in Uasin Gishu during January 1979. Lake Ol Bolossat is situated only a short distance east of the rift valley lakes Bogoria, Solai and Nakuru, with which it probably exchanges birds. At the end of December 1979 over 1000 Ruffs were recorded there, together with

several hundred Little Stints, a few tens of Wood Sandpipers and, amongst other species, three Temminck's Stints.

With an increase in the number of algal stabilization ponds, the Nairobi area has assumed a greater importance for waders in recent years; early in 1980 over 1000 waders (mainly Ruffs) were located here. Comparing the figures obtained during the survey described herein with what is known of these other wetlands, it is clear that the smaller rift valley lakes and swamps do accomodate an appreciable percentage of all waders wintering in inland Kenya, and perhaps over half of those occurring south of Lake Turkana.

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